



#6/a  
H. Parker  
4/11/02

PATENT APPLICATION  
Q61526

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Toshiaki KASHIHARA, et al.

Appln. No.: 09/705,792

Confirmation No.: 6031

Group Art Unit: 2834

Filed: November 07, 2000

Examiner: Tamai, Karl I.

For: VEHICLE AC GENERATOR

AMENDMENT UNDER 37 C.F.R. § 1.111

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Office Action dated January 15, 2002, please amend the above-identified application as follows:

IN THE TITLE:

Please replace the title with the following new title:

VEHICLE AC GENERATOR WITH RECTIFIER DIODE PACKAGE DISPOSED  
BETWEEN COOLING PLATES

IN THE CLAIMS

Please cancel claims 9 and 10 without prejudice or disclaimer.

TECHNOLOGY CENTER 2800

APR - 8 2002

RECEIVED

**IN THE ABSTRACT OF DISCLOSURE:**

Please delete the present Abstract of the Disclosure and replace it with the following  
new Abstract of the Disclosure:

A vehicle AC generator having a rectifier unit with cooling plates for the positive-electrode and negative-electrode sides, each having principal planes opposing each other; and a diode package disposed between the cooling plates for the positive-electrode and negative-electrode sides. The diode package has a base for the positive-electrode side formed of a metallic plate and joined to a cathode face of the unidirectionally conducting element for the positive-electrode side; a base for the negative-electrode side formed of a metallic plate and joined to an anode face of the unidirectionally conducting element for the negative-electrode side; and an insulating resin provided so that the unidirectionally conducting elements for the positive-electrode and negative-electrode sides are embedded therein. The end face of the base for the positive-electrode side is joined to the principal plane of the cooling plate for the positive-electrode side while the end face of the base for the negative-electrode side is joined to the principal plane of the cooling plate for the negative-electrode side.

**REMARKS**

Applicants thank the Examiner for acknowledging the claim for foreign priority and receipt of priority documents. Applicants also thanks the Examiner for initialing and considering the references listed on the PTO-1449 form submitted with the Information Disclosure Statement filed on November 6, 2000.

The Examiner objects to the title of the invention. Applicants hereby amend the title to "Vehicle AC Generator with Rectifier Diode Package Disposed between Cooling Plates".

The Examiner objects to the Abstract. Applicants hereby amend the abstract and submit that it is now in proper form.

Claims 1-19 are all the claims pending in the application. Claim 1 is the only independent claim. Applicants hereby cancel claims 9 and 10.

**Claim Rejections 35 U.S.C. § 103**

Claims 1, 5, 6, 9-11, 13, 15-17, and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano (JP 5-176539) in view of Gautier (U.S. 5, 982,062). Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further view of Einthoven (U.S. 5,950,068). Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further view of Ragaly (U.S. 4,303,935). Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further view of Mori et al. (U.S. 5,828,564). Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further

view of Abadia et al. (U.S. 5,883,450). Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further view of Deverall et al. (U.S. 5,451,823). Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawano in view of Gautier, and in further view of Yoshinaga et al. (U.S. 5,886,403). Applicants respectfully traverse these rejections.

The Examiner characterizes Kawano as teaching “every aspect of the invention except the metal base plates for the diodes with cooling fins”; however, with respect to independent claim 1, in the diode package of Kawano “the end face of the base” for each of the positive-electrode side and negative electrode side is not “joined to the principal plane of the cooling plate” for each of the positive-electrode side and negative electrode side. As is shown in Figs. 2 and 8 of Kawano, the base 50 of one side of the diode 5b is disposed only within the radiation fin 2. This diode 5b is not joined to the principal plane of the radiation fin, but is instead joined only to the sides of a hole 21 within the radiation fin 1.

The fact that each of the bases of the present invention are joined to the principal planes of the cooling plates increases the thermal conduction from each base to the plate. This is discussed with respect to the deficiencies of Kawano in the Specification from the paragraph bridging Pages 12 and 13 to the paragraph bridging pages 13 and 14. FIGs. 34 and 35 correspond to Figures 2 and 12 of Kawano, using different reference numbers.

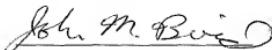
Therefore, because the combination of Kawano and Gautier does not teach or suggest all of the limitations of claim 1, Applicants request that the Examiner withdraw the rejection of

claim 1. Applicants also request that the Examiner withdraw the rejection of claims 2-8 and 11-19 because of their dependency, directly or indirectly, from claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



John M. Bird  
Registration No. 46, 027

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: April 4, 2002